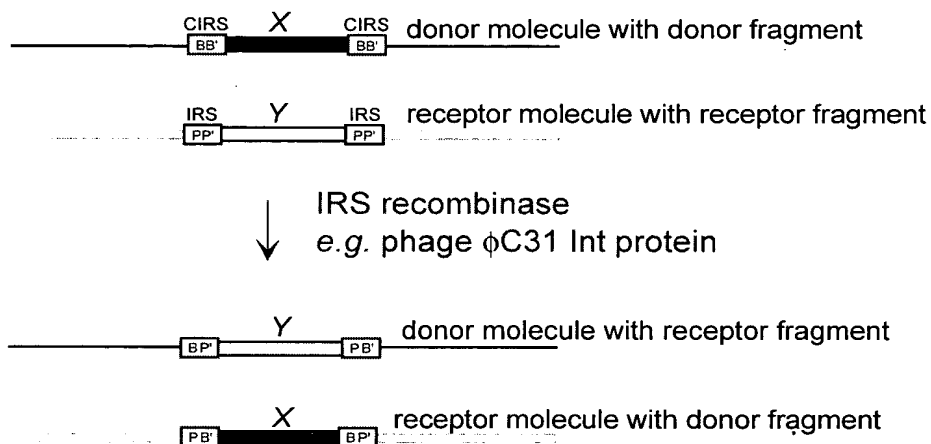
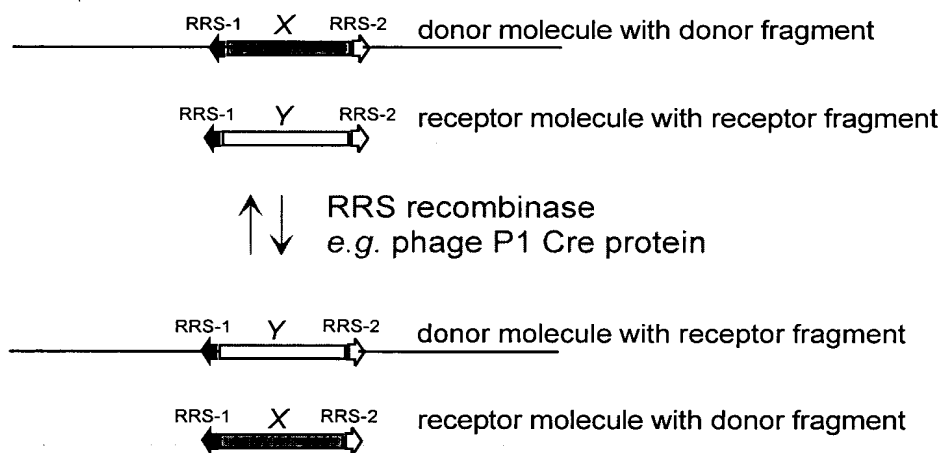


Figure 1

A



B



PP'	= attP
BB'	= attB
PB'	= attR
BP'	= attL
◀	= loxP
◁	= lox511

Figure 2

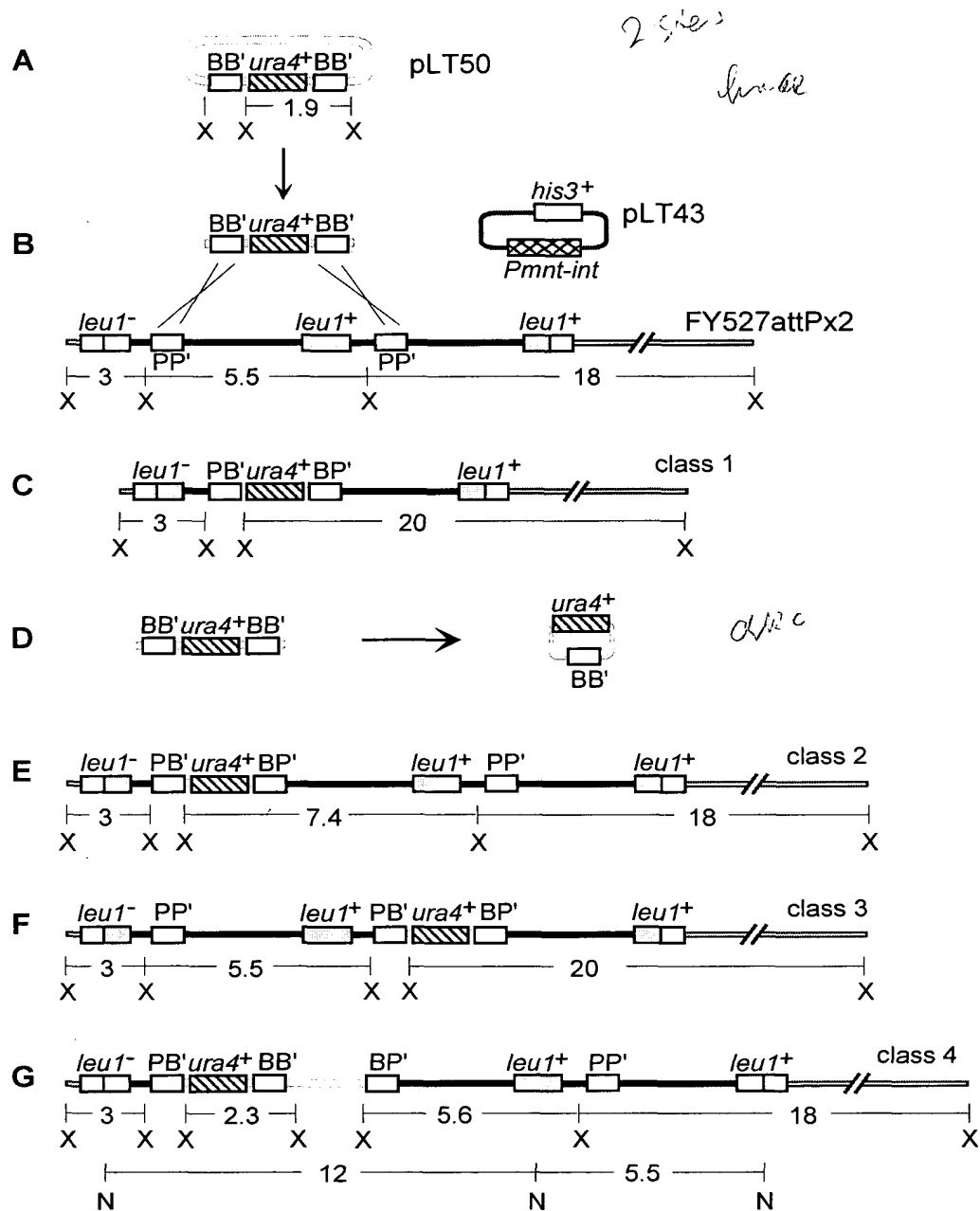


Figure 3

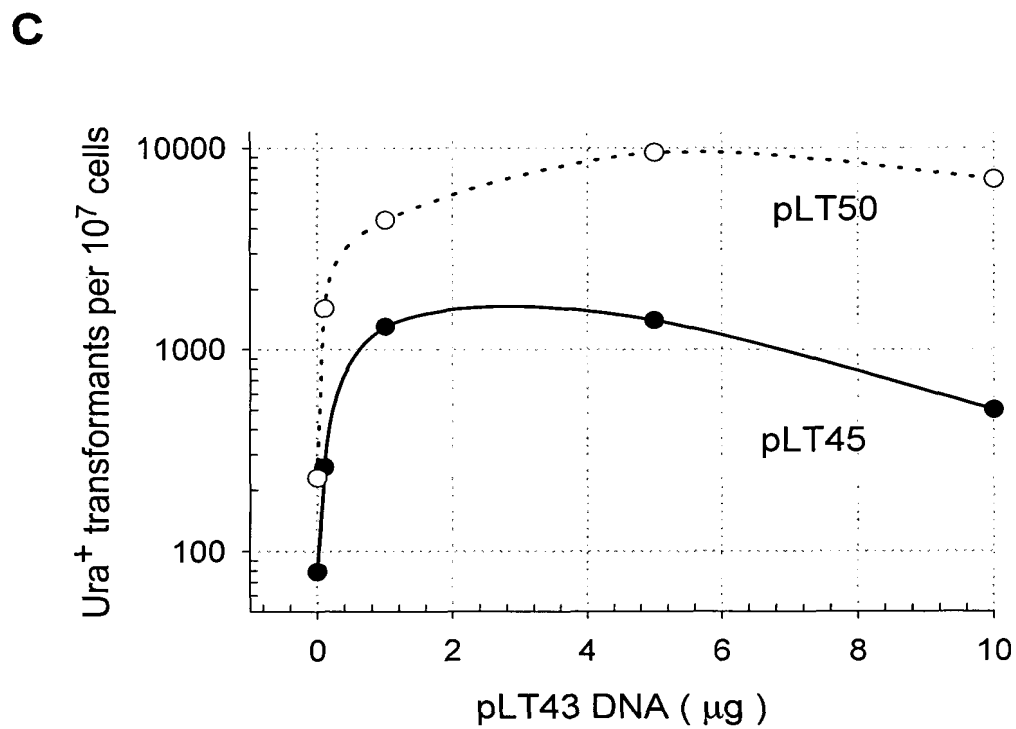
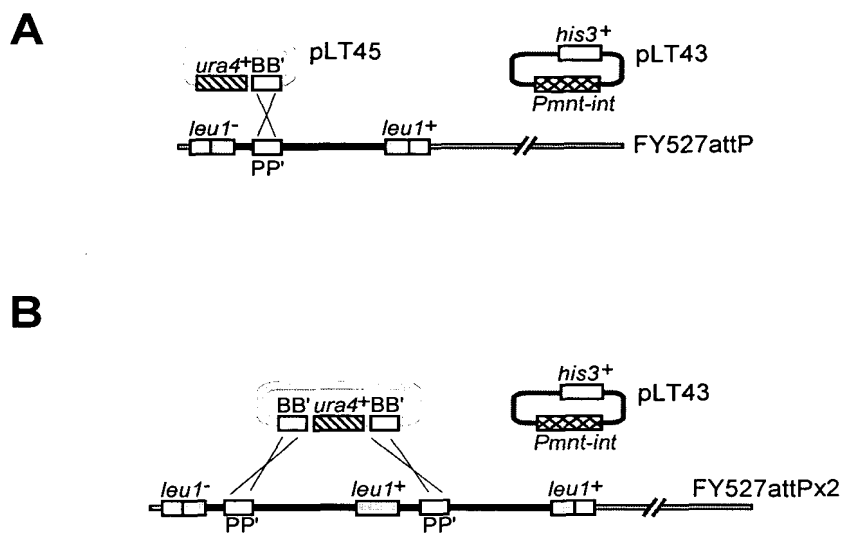
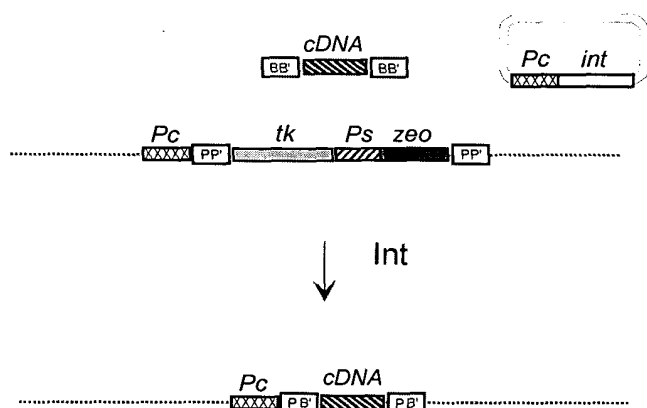


Figure 4

# cDNA integration in mammalian cells transient expression of *int*



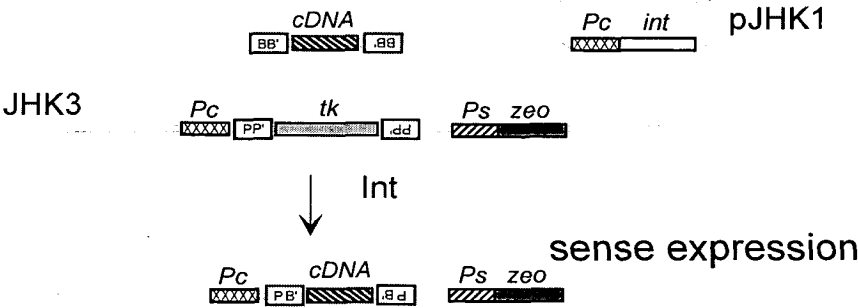
*Pc* = human cytomegalovirus promoter  
*Ps* = SV40 early promoter  
*zeo* = zeocin resistance coding region  
*tk* = thymidine kinase coding region  
*int* = integrase coding region

PP' = *attP*  
 BB' = *attB*  
 PB' = *attR*  
 BP' = *attL*

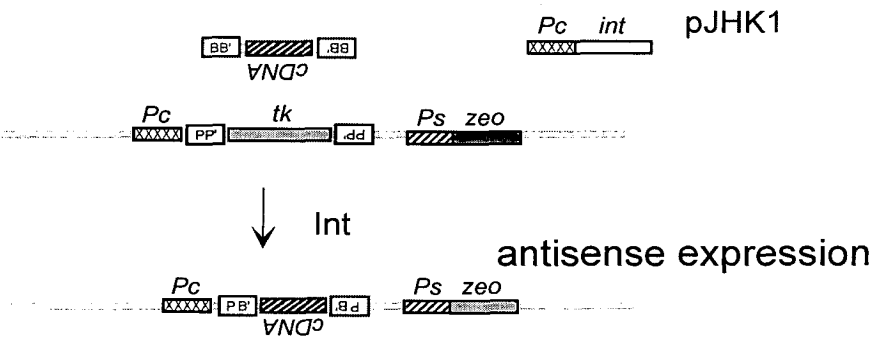
Figure 5, part I

Strategy for cDNA integration in mammalian cells

A



B



C



D

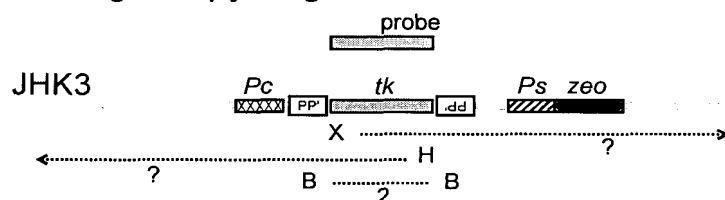


*Pc* = human cytomegalovirus promoter  
*Ps* = SV40 early promoter  
*zeo* = zeocin resistance coding region  
*tk* = thymidine kinase coding region

*PP'* = attP  
*BB'* = attB  
*PB'* = attR  
*BP'* = attL

Figure 5, part II

# **E** Single copy target construct in human cells



*Pc* = human cytomegalovirus promoter  
*Ps* = SV40 early promoter  
*zeo* = zeocin resistance coding region  
*tk* = thymidine kinase coding region

PP' = attP  
 BB' = attB  
 PB' = attR  
 BP' = attL

# **F** PCR detection of DNA exchange

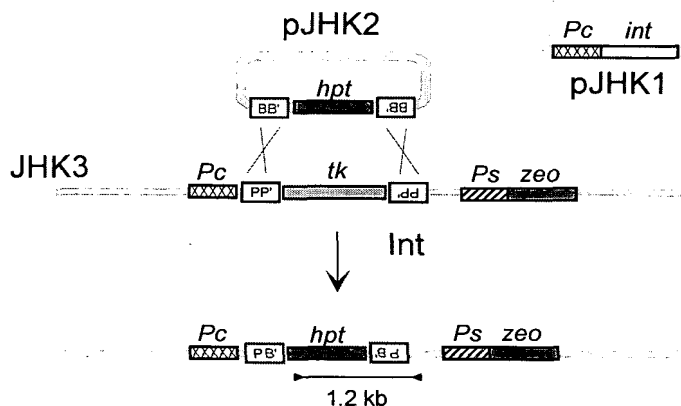
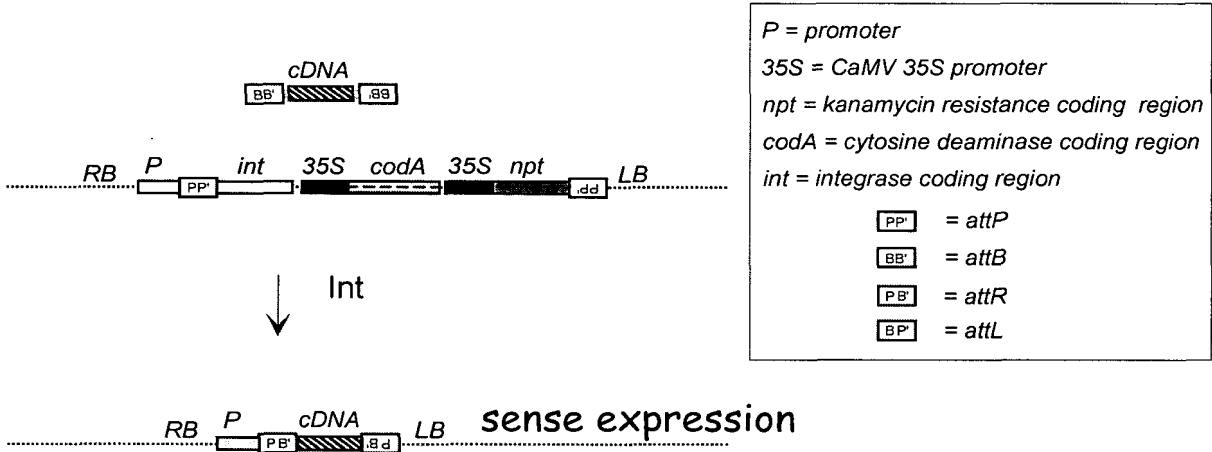


Figure 6

cDNA integration in plant cells  
*int* expressed from target site

A



B

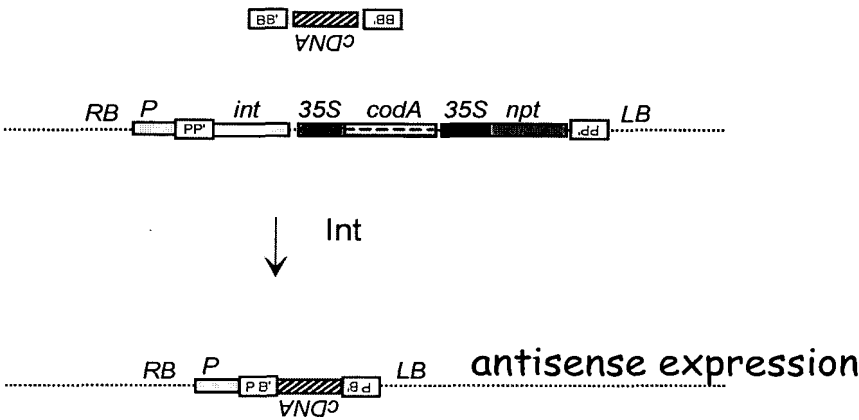
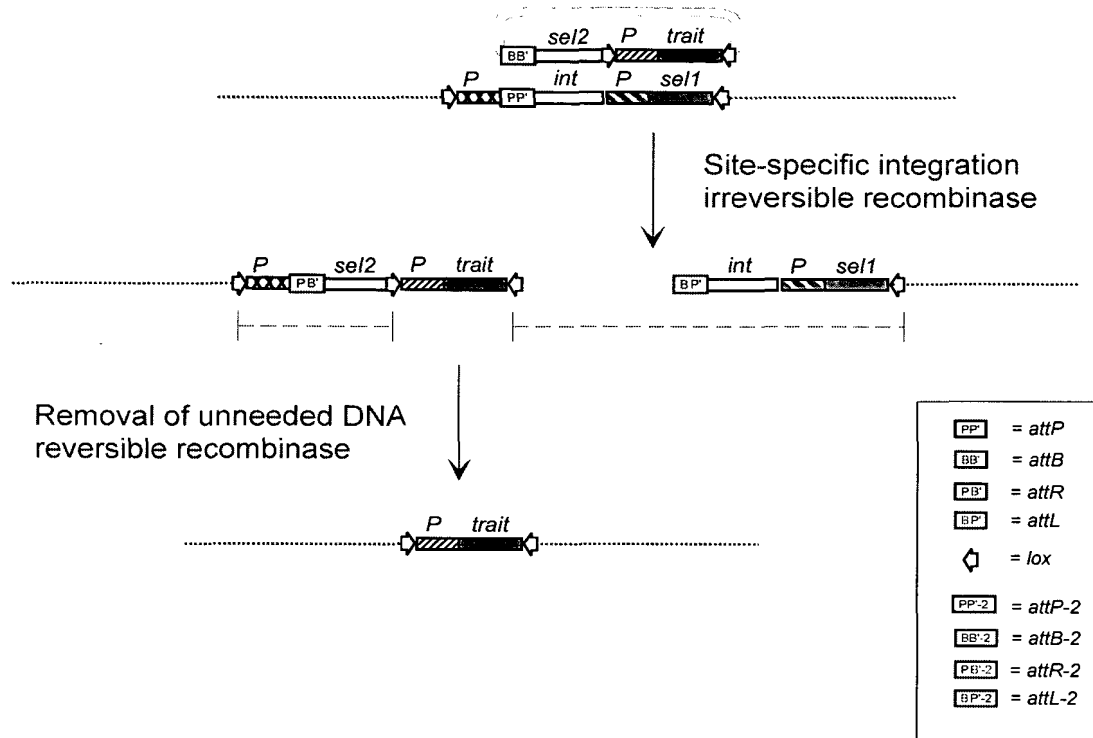


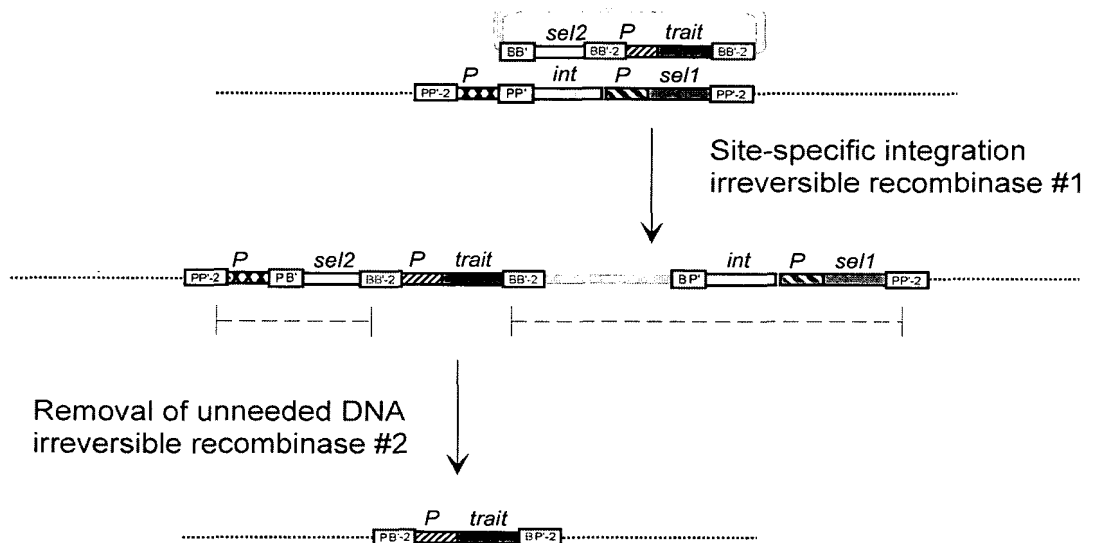
Figure 7

# General strategy to incorporate only the trait gene

A



B







# General strategy to stack genes, part2

## Use of directly oriented sites

Figure 8, part II

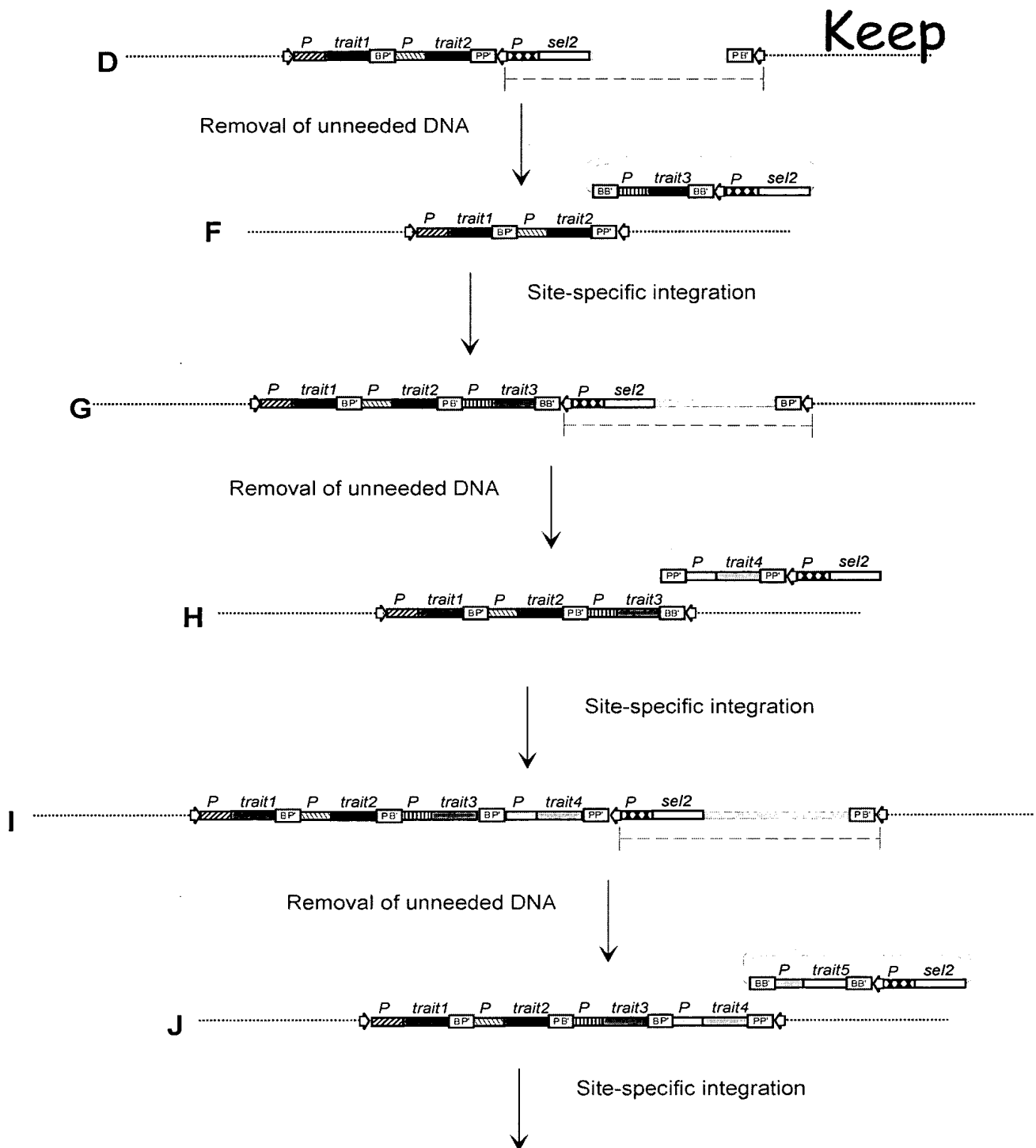
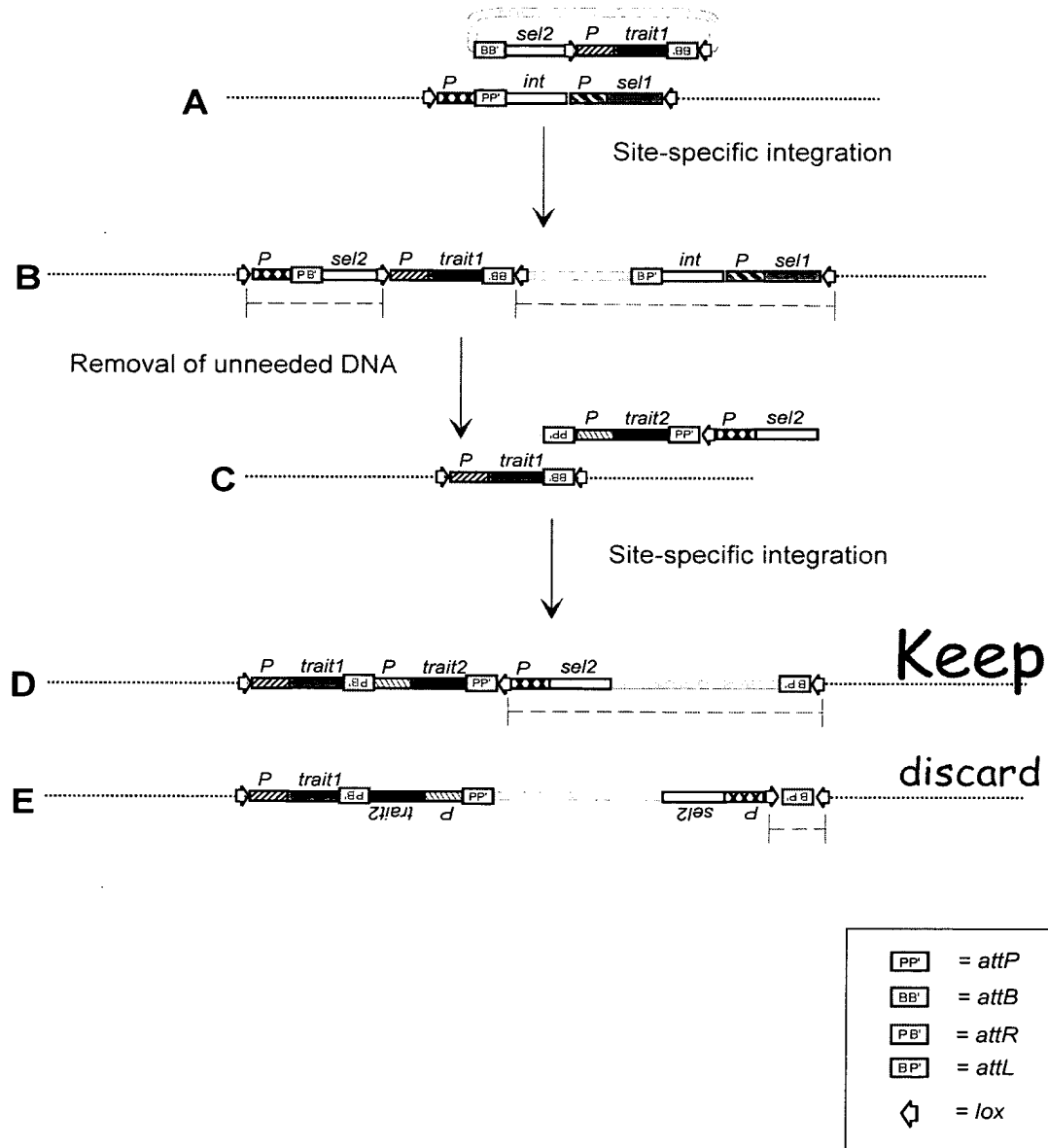


Figure 9, part I

General strategy to stack genes, part1

Use of inverted sites



# General strategy to stack genes, part2

## Use of inverted sites

Figure 9, part II

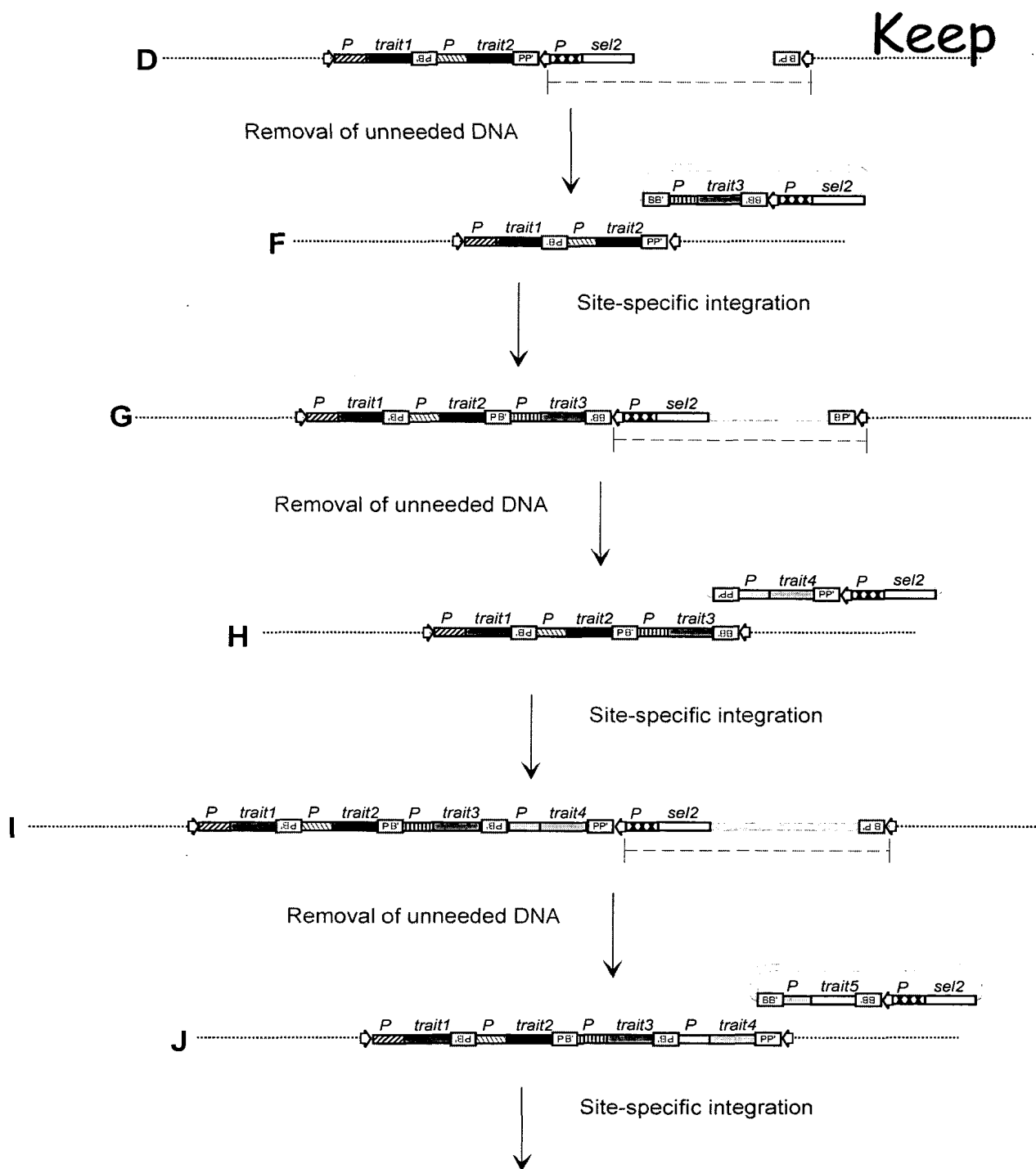


Figure 10

Gene replacement in the host genome with directly oriented dual sites

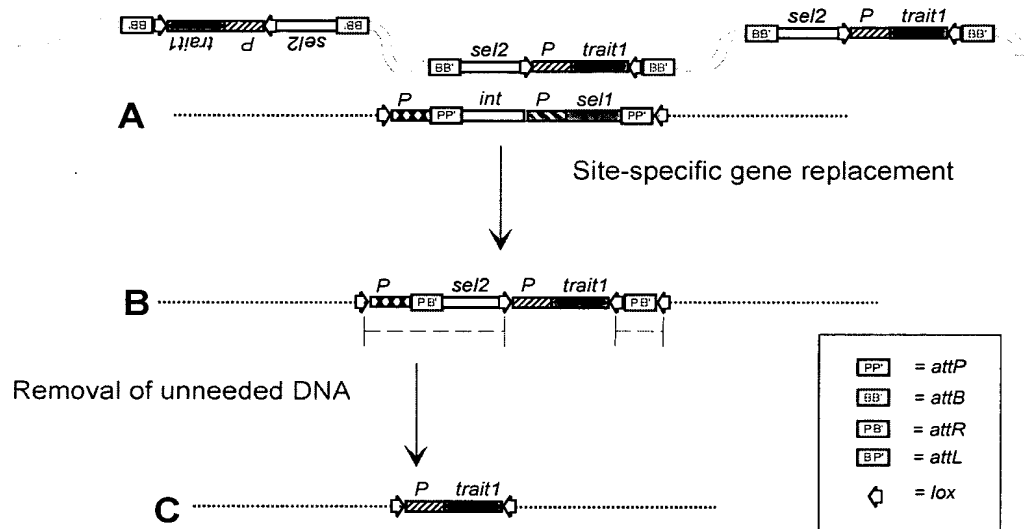


Figure 11

Gene replacement in the host genome with inverted dual sites

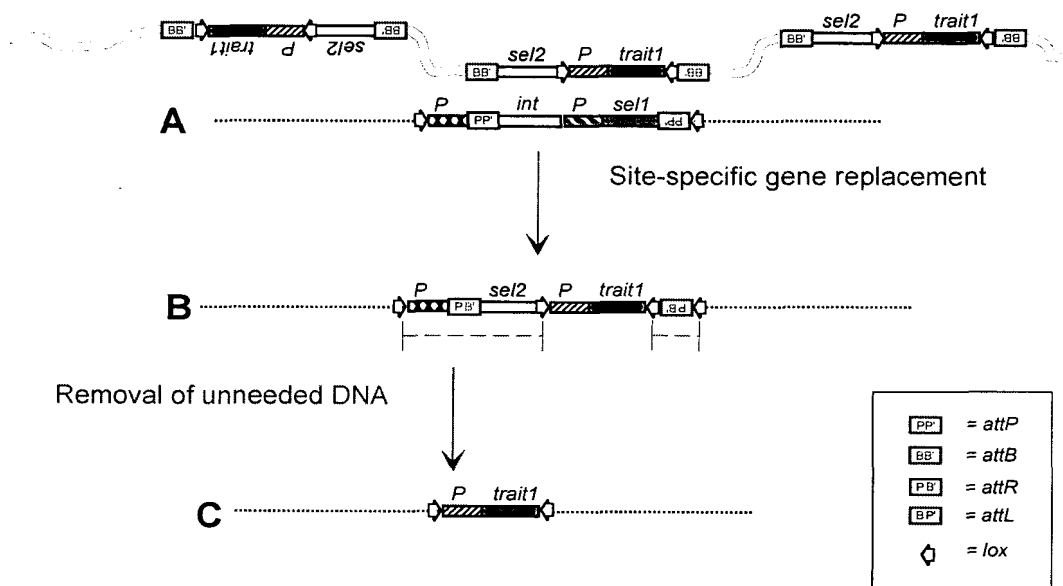


Figure 12

Transgene translocation from one chromosome to another

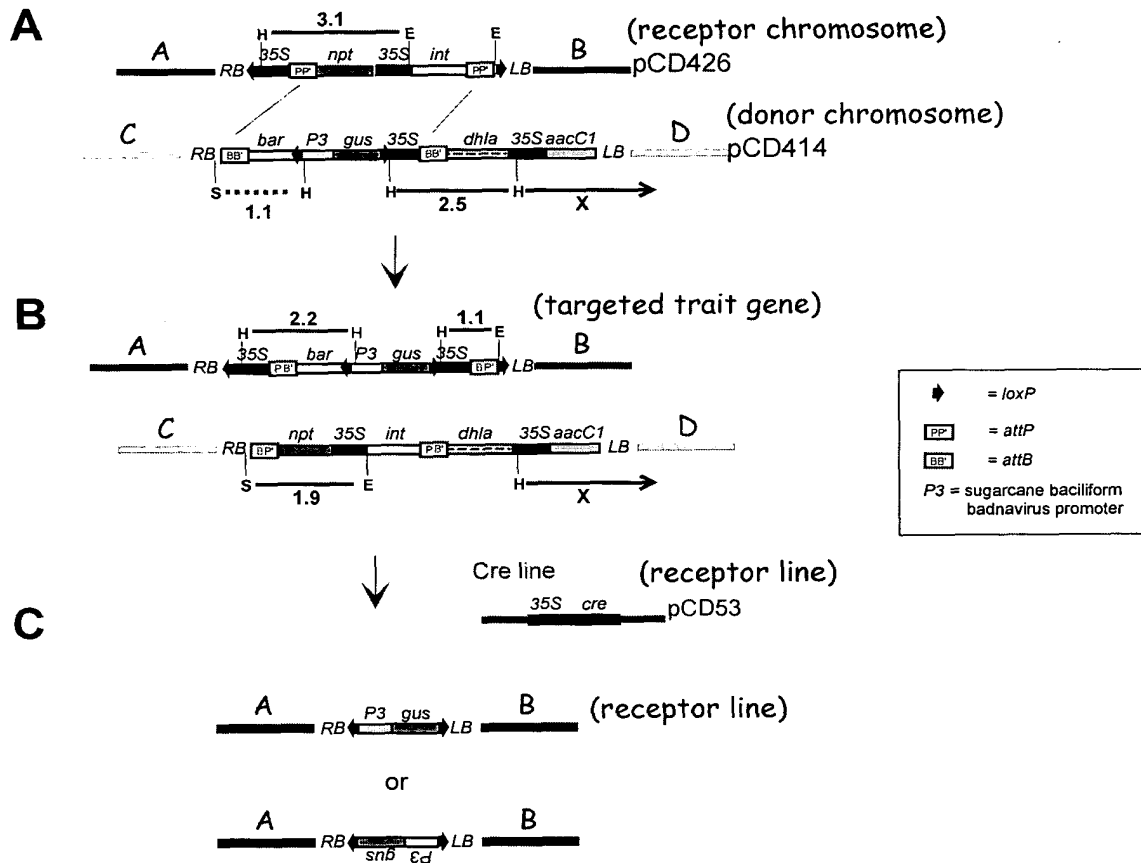
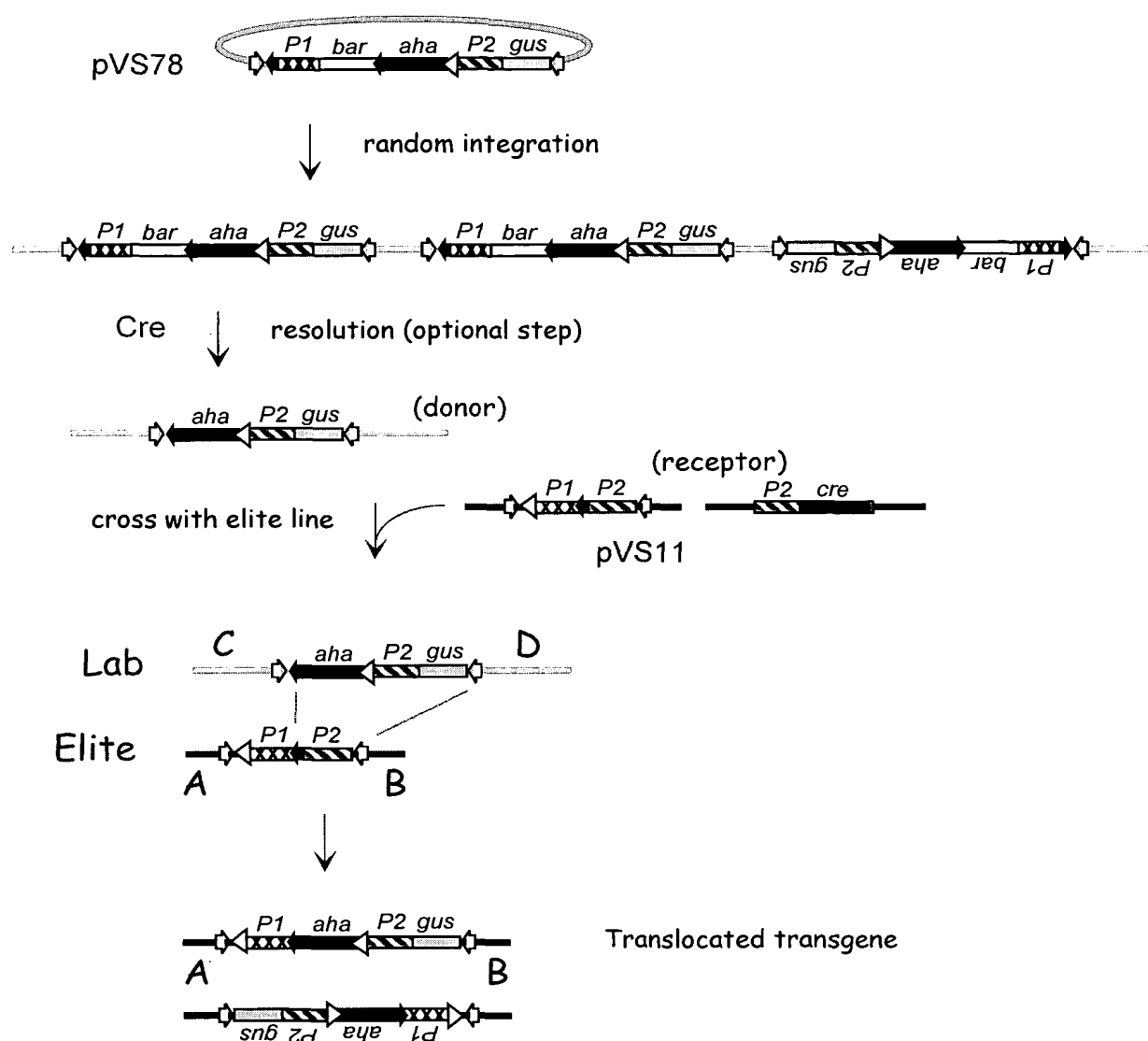


Figure 13

# Transgene translocation using reversible recombination systems



*P1* = Rice Actin promoter  
*P2* = Maize Ubiquitin promoter

◁ = *FRT*

◆ = *loxP*

◊ = *lox511*